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EXAMINER	
YEN, ERIC L	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,869	YOSHIZAWA, SHINICHI	
	Examiner	Art Unit	
	ERIC YEN	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the Advisory Action mailed 9/10/08, applicant has submitted an amendment filed 9/15/08.

Claims 26-29, 35-37, 39-41, and 44-56 have been amended. New Claims 57 and 58 have been added.

Response to Arguments

2. Applicant's arguments filed 11/16/08 have been fully considered but they are not persuasive.

Applicant argues that, in Chang, “the acoustic model generation component… modifies the parameters of the speaker-independent acoustic model based on the parameters of the estimated cohort models, which are included in the cohort data”, and “thus, although Chang discloses the storage of a plurality of cohort models and the generation of a customized speech model, the generation of the customized speech model appears to be based on the use of one cohort model", and “thus, Chang fails to disclose the generation of a customized speech model, using a plurality of cohort models” (Amendment, page 25).

The examiner respectfully disagrees, because, as applicant described, the acoustic model (i.e., the standard model), is based on "parameters of the estimated cohort models” (referring to paragraph 57). Chang specifically says that the customized

model (e.g., paragraph 58) uses the modified parameters modified based on plural cohort models, and since the cohort models are already stored, then they are reference models stored in a reference model storing unit (cohort storage) that is selected (i.e., paragraph 54 which selects a number of cohort models) and uses these selected models to generate/create the standard model from the cohort models ("calculating parameters of the standard model using parameters of the plurality of reference models").

Applicant then argues that in Chang, "the customized speech model is based on a large amount of data selected according to the cohort model", and "therefore, the amount of processing is large, and the system would not be able to function during authentication or online authentication", and that applicant's invention "conversely… creat[es] the standard model… based on statistics", and "thus,… there is a learning process based on parameters… of the reference models", and "accordingly, since this learning is performed through the parameters of the reference models… it becomes possible to create the standard model instantaneously, and use it in authentication or online authentication" (Amendment, page 25).

Even if this were true, these arguments do not preclude Chang from reading on the claim language. What applicant's invention actually does has no bearing on whether the claim language can be read on, and that Chang may not function as well as applicant's invention does not mean that Chang is not creating a standard model from a number of cohorts which are stored. This feature in Chang reads on storing reference

models and selecting reference models and creating the standard model by using the plurality of reference models.

Applicant's remaining arguments are similar to those discussed above, and so the examiner disagrees for similar reasons.

Specifically, Chang specifically teaches that the modification parameters are derived from multiple cohort models (e.g., paragraph 53), at least because he says "cohort models" in his description of how the modified parameters are derived.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 26-36, 40-50, and 52-58, are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (US 2003/0171931), in view of Nguyen et al. (US 6,263,309), hereafter Nguyen.

As per Claim 26, Chang teaches a standard model creating apparatus for creating a standard model which shows an acoustic characteristic having a specific attribute and is used for speech recognition, the standard model creating apparatus

using a model that expresses a frequency parameter showing an acoustic characteristic (“recognition model… acoustic model… customized to a user”, paragraph 1; “frequencies”, paragraph 67), the standard model creating apparatus comprising:

a reference model storing unit operable to store a plurality of reference models which are models showing an acoustic characteristic having a specific attribute (“plurality of different cohort models”, paragraph 40; "enrollment data", paragraph 39; "selects the speakers... closest to enrollment data", paragraph 42)

a reference model selecting unit operable to select a plurality of reference models from among the plurality of reference models stored in said reference model storing unit based on usage information regarding an attribute which is an object of speech recognition, (“plurality of different cohort models”, paragraph 40; "enrollment data", paragraph 39; "selects the speakers... closest to enrollment data", paragraph 42; “top N possible cohort models”, paragraph 51; where the speaker’s voice qualities are attributes that are targeted by speaker dependent recognizers)

a standard model creating unit operable to create the standard model by calculating parameters of the standard model using parameters of the plurality of reference models selected by said reference model selection unit (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57)

wherein said standard model creating unit includes: a standard model structure determining unit operable to determine a structure of the standard model which is to be

created (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57)

an initial standard model creating unit operable to determine initial values of the parameters specifying the standard model whose structure has been determined (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57)

a parameter estimating unit operable to estimate and calculate the parameters of the standard model so as to maximize or locally maximize a probability or likelihood of the standard model, whose initial values have been determined, with respect to the plurality of reference models (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57; “likelihood", paragraph 55)

Chang fails to teach the standard model creating apparatus using a probability model that expresses a frequency parameter showing an acoustic characteristic as an output probability, where the reference models are probability models, where the parameters are statistics

Nguyen teaches the standard model creating apparatus using a probability model that expresses a frequency parameter showing an acoustic characteristic as an output probability, where the reference models are probability models, where the parameters are statistics (“training speakers… speaker dependent [SD] models”, col. 4, lines 38-52; “supervector for each speaker comprises an ordered list of parameters… corresponding to at least a portion of the parameters of the Hidden Markov models”, col. 4, lines 53-64;

“new speaker... compute statistics… each sound unit", col. 5, lines 42-56; “HMM… observable outputs… transition probabilities”, col. 3, lines 17-43; “Gaussian distributions… probability distribution… Gaussian function… parameter-based speech modeling”, col. 4, lines 3-36; “Alabama female accent", col. 7, lines 5-13; where parameters generally include frequency parameters when analyzing speech [speech is acoustic]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang to include the teaching of Nguyen of the standard model creating apparatus using a probability model that expresses a frequency parameter showing an acoustic characteristic as an output probability, where the reference models are probability models, where the parameters are statistics, in order to facilitate quick speaker adaptation of models, as described by Nguyen (col. 1, lines 7-10; col. 1, lines 60-66).

As per Claim 27, Chang teaches usage information creating unit operable to create the usage information, wherein said reference selecting unit is operable to select plurality of reference models from among the plurality of reference models stored in said reference model storing unit, based on the created usage information (“recognition model… acoustic model… customized to a user”, paragraph 1; "enrollment data", paragraph 39; "selects the speakers... closest to enrollment data", paragraph 42).

As per Claim 28, Chang suggests wherein the standard model creating apparatus is connected to a terminal apparatus via a communication channel, and further comprises: a usage information receiving unit operable to receive the usage information from the terminal apparatus, wherein said reference model selecting unit is operable to select plurality of reference models from among the plurality of reference models stored in said reference model storing unit, based on the received usage information (“input speech samples”, paragraph 39; “remote computer”, paragraph 34; “recognition model… acoustic model… customized to a user”, paragraph 1; "enrollment data", paragraph 39; "selects the speakers... closest to enrollment data", paragraph 42; where the input speech receiving device can be a terminal)

As per Claim 29, the limitations are similar to those in Claim 26, and so is rejected under similar rationale.

As per Claim 30, Chang teaches wherein the specification information shows at least one of a type of an application program which uses the standard model, and specifications of an apparatus which uses the standard model (“recognition model… acoustic model… customized to a user”, paragraph 1; where the user that the system is customized to is a specification of a speaker dependent apparatus)

As per Claim 31, Chang teaches wherein the attribute includes information regarding at least one of an age, gender, a texture of a speaker’s voice, a tone of voice

changed with emotions or health condition, a speaking rate, civility in utterance, a dialect, a type of background noise, loudness of background noise, an S/N ratio between speech and background noise, a microphone quality, and a degree of complexity in recognizable vocabulary ("recognition model… acoustic model… customized to a user", paragraph 1; customizing a model to be speaker dependent requires adapting to a speaker's voice qualities, including a texture of the voice and the gender).

As per Claim 32, Chang suggests a specification information holding unit operable to store an application/specifications correspondence database showing a correspondence between an application program which uses the standard model and specifications of the standard model, wherein said standard model structure determining unit is operable to read specifications corresponding to an application program to be activated from the application/specifications correspondence database held by said specification information holding unit, and to determine the structure of the standard model based on the read specifications ("recognition model… acoustic model… customized to a user", paragraph 1; "parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57; where it is known that computers have multiple users, and so it is obvious to store some sort of correspondence between the different users and their respective models, and to use the correct model when a corresponding user desires to use the recognition system).

As per Claim 33, Chang teaches a specification information creating unit operable to create the specification information, wherein said model structure determining unit is operable to determine the structure of the standard model based on the created specification information ("recognition model… acoustic model… customized to a user", paragraph 1; where knowledge of the user who the model is to be adapted for is obvious to indicate to the system).

As per Claim 34, the limitations are similar to those in Claim 28, and so is rejected under similar rationale.

As per Claim 35, Chang fails to teach wherein the plurality of reference models and the standard model are expressed using at least one Gaussian distribution, and said standard model structure determining unit is operable to determine at least a number of Gaussian mixture distributions as the structure of the standard model.

Nguyen suggests wherein the plurality of reference models and the standard model are expressed using at least one Gaussian distribution, and said standard model structure determining unit is operable to determine at least a number of Gaussian mixture distributions as the structure of the standard model ("training speakers… speaker dependent [SD] models", col. 4, lines 38-52; "supervector for each speaker comprises an ordered list of parameters… corresponding to at least a portion of the parameters of the Hidden Markov models", col. 4, lines 53-64; "new speaker... compute

statistics… each sound unit", col. 5, lines 42-56; “HMM… observable outputs… transition probabilities”, col. 3, lines 17-43; “Gaussian distributions… probability distribution… Gaussian function… parameter-based speech modeling”, col. 4, lines 3-36; “Alabama female accent", col. 7, lines 5-13; where Nguyen teaches the use of Gaussians in hidden markov models and so suggests where the Gaussians are what are adapted in a model)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang to include the teaching of Nguyen of wherein the plurality of reference models and the standard model are expressed using at least one Gaussian distribution, and said standard model structure determining unit is operable to determine at least a number of Gaussian mixture distributions as the structure of the standard model, in order to facilitate quick speaker adaptation of models, as described by Nguyen (col. 1, lines 7-10; col. 1, lines 60-66).

As per Claim 36, the limitations are similar to those in Claims 26 and 35, and so is rejected under similar rationale.

As per Claim 40 and 52, the limitations are similar to those in Claim 26, and so is rejected under similar rationale (where the class the set of users that sound similar to the user).

As per Claim 41, Chang teaches wherein said initial model creating unit is operable to specify the class ID from the plurality of reference models and to determine initial values associated with the specified ID as the initial values (“plurality of different cohort models”, paragraph 40; "enrollment data", paragraph 39; "selects the speakers... closest to enrollment data", paragraph 42; “top N possible cohort models”, paragraph 51).

As per Claim 42, the limitations are similar to those in Claim 32, and so is rejected under similar rationale.

As per Claim 43, Chang suggests wherein said initial standard model creating unit is operable to generate the correspondence table by creating, or by obtaining from an outside source, an initial standard model with a class ID, that is, initial values associated with the class ID, or a reference model with a class ID, that is a reference model associated with the class ID (“recognition model… acoustic model… customized to a user”, paragraph 1; “parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57; where it is known that computers have multiple users, and so it is obvious to store some sort of correspondence between the different users and their respective models, and to store a label for each different user to know which model to use).

As per Claims 44-45, 48, and 53-54, their limitations are similar to those in Claim 26, and so are rejected under similar rationale.

As per Claim 46-47, 49, and 55-56, their limitations are similar to those in Claim 29, and so are rejected under similar rationale.

As per Claim 50, the limitations are similar to those in Claim 36, and so is rejected under similar rationale.

As per Claim 57, Chang fails to teach wherein the standard model is expressed using a mixture of a plurality of Gaussian distributions, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of the plurality of Gaussian distributions, as the statistics of the standard model.

Nguyen suggests wherein the standard model is expressed using a mixture of a plurality of Gaussian distributions, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of the plurality of Gaussian distributions, as the statistics of the standard model ("Gaussian… mixture of Gaussian functions… parameters… mixture coefficient…mean vector… covariance matrix", col. 4, lines 9-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang to include the teaching of Nguyen of wherein the

standard model is expressed using a mixture of a plurality of Gaussian distributions, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of the plurality of Gaussian distributions, as the statistics of the standard model, in order to facilitate quick speaker adaptation of models, as described by Nguyen (col. 1, lines 7-10; col. 1, lines 60-66).

As per Claim 57, Chang fails to teach wherein the standard model is expressed using a mixture of a plurality of Gaussian distributions, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of the plurality of Gaussian distributions, as the statistics of the standard model.

Nguyen suggests wherein the standard model is expressed using a mixture of a plurality of Gaussian distributions, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of the plurality of Gaussian distributions, as the statistics of the standard model ("Gaussian… mixture of Gaussian functions… parameters… mixture coefficient…mean vector… covariance matrix", col. 4, lines 9-23)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang to include the teaching of Nguyen of wherein the standard model is expressed using a mixture of a plurality of Gaussian distributions, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of the plurality of Gaussian

distributions, as the statistics of the standard model, in order to facilitate quick speaker adaptation of models, as described by Nguyen (col. 1, lines 7-10; col. 1, lines 60-66).

As per Claim 58, Chang fails to teach wherein the reference model is expressed using output distributions for a plurality of states, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of a plurality of Gaussian distributions, as the statistics of the standard model that maximizes or locally maximizes the probability or the likelihood of the standard model, with respect to each of the output distributions in the plurality of states of the reference model.

Nguyen suggests wherein the reference model is expressed using output distributions for a plurality of states, and said statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of a plurality of Gaussian distributions, as the statistics of the standard model that maximizes or locally maximizes the probability or the likelihood of the standard model, with respect to each of the output distributions in the plurality of states of the reference model ("output probability values…Gaussian… mixture of Gaussian functions… parameters… mixture coefficient…mean vector… covariance matrix", col. 4, lines 9-23; Figure 1; "states")

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang to include the teaching of Nguyen of wherein the reference model is expressed using output distributions for a plurality of states, and said

statistics estimating unit is operable to estimate and calculate a mixture weighting coefficient, a mean value, and a variance of each of a plurality of Gaussian distributions, as the statistics of the standard model that maximizes or locally maximizes the probability or the likelihood of the standard model, with respect to each of the output distributions in the plurality of states of the reference model, in order to facilitate quick speaker adaptation of models, as described by Nguyen (col. 1, lines 7-10; col. 1, lines 60-66).

5. Claims 37-38, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, in view of Nguyen and Junqua (US 6,253,181).

As per Claim 37, Chang teaches a standard model creating apparatus for creating a standard model which shows an acoustic characteristic having a specific attribute and is used for speech recognition, the standard model creating apparatus using a model that expresses a frequency parameter showing an acoustic characteristic (“recognition model… acoustic model… customized to a user”, paragraph 1; “frequencies”, paragraph 67), the standard model creating apparatus comprising:

a reference model storing unit operable to store a plurality of reference models which are models showing an acoustic characteristic having a specific attribute (“plurality of different cohort models”, paragraph 40; "enrollment data", paragraph 39; "selects the speakers... closest to enrollment data", paragraph 42)

a reference model preparing unit operable to perform at least one of obtaining a reference model from an outside source and storing the obtained reference model in said reference model storing unit, and creating a new reference model and storing the new reference model in said reference model storing unit (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57)

a reference model selecting unit operable to select at least one reference model from among the plurality of reference models stored in said reference model storing unit based on usage information regarding an attribute which is an object of speech recognition, (“plurality of different cohort models”, paragraph 40; "enrollment data", paragraph 39; "selects the speakers... closest to enrollment data", paragraph 42; “top N possible cohort models”, paragraph 51; where the speaker’s voice qualities are attributes that are targeted by speaker dependent recognizers)

a standard model creating unit operable to create the standard model by calculating parameters of the standard model using parameters of the plurality of reference models selected by said reference model selection unit (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57)

wherein said standard model creating unit includes: a standard model structure determining unit operable to determine a structure of the standard model which is to be created (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57)

an initial standard model creating unit operable to determine initial values of the parameters specifying the standard model whose structure has been determined (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57)

a parameter estimating unit operable to estimate and calculate the parameters of the standard model so as to maximize or locally maximize a probability or likelihood of the standard model, whose initial values have been determined, with respect to the plurality of reference models (“parameters for possible cohorts are generated", paragraph 53; "modifies the parameters... using the parameters in the... cohort models", paragraph 57; “likelihood", paragraph 55)

Chang fails to teach the standard model creating apparatus using a probability model that expresses a frequency parameter showing an acoustic characteristic as an output probability, where the reference models are probability models, where the parameters are statistics.

Nguyen teaches the standard model creating apparatus using a probability model that expresses a frequency parameter showing an acoustic characteristic as an output probability, where the reference models are probability models, where the parameters are statistics (“training speakers… speaker dependent [SD] models”, col. 4, lines 38-52; “supervector for each speaker comprises an ordered list of parameters… corresponding to at least a portion of the parameters of the Hidden Markov models”, col. 4, lines 53-64; “new speaker... compute statistics… each sound unit", col. 5, lines 42-56; “HMM… observable outputs… transition probabilities”, col. 3, lines 17-43; “Gaussian

distributions… probability distribution… Gaussian function… parameter-based speech modeling", col. 4, lines 3-36; "Alabama female accent", col. 7, lines 5-13; where parameters generally include frequency parameters when analyzing speech [speech is acoustic])

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang to include the teaching of Nguyen of the standard model creating apparatus using a probability model that expresses a frequency parameter showing an acoustic characteristic as an output probability, where the reference models are probability models, where the parameters are statistics, in order to facilitate quick speaker adaptation of models, as described by Nguyen (col. 1, lines 7-10; col. 1, lines 60-66).

Chang, in view of Nguyen, fail to teach at least one of updating and adding to the plurality of reference models stored in said reference model storing unit.

Junqua teaches at least one of updating and adding to the plurality of reference models stored in said reference model storing unit (""adapted speech model", col. 3, lines 12-28; "further adapted model", col. 7, lines 42-50; "supplies utterances…performs speech recognition… passed by the dialogue system to adaptation system", col. 4, lines 24-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang, in view of Nguyen, to include the teaching of Junqua of at least one of updating and adding to the plurality of reference models stored in said

reference model storing unit, in order to ensure that the system's models stay consistent with any changes to the user, as described by Junqua (col. 7, lines 42-50).

As per Claim 38, Chang, in view of Nguyen, fail to teach wherein said reference model preparing unit is operable to perform at least one of an update and an addition to the plurality of reference models stored in said reference model storing unit, based on at least one of usage information regarding an object of recognition, and specification information regarding specifications of the standard model which is to be created.

Junqua teaches wherein said reference model preparing unit is operable to perform at least one of an update and an addition to the plurality of reference models stored in said reference model storing unit, based on at least one of usage information regarding an object of recognition, and specification information regarding specifications of the standard model which is to be created (“”adapted speech model”, col. 3, lines 12-28; "further adapted model", col. 7, lines 42-50; “supplies utterances…performs speech recognition… passed by the dialogue system to adaptation system", col. 4, lines 24-36; where the specific user whose model is updated is usage information for the corresponding models [objects of recognition]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang, in view of Nguyen, to include the teaching of Junqua of wherein said reference model preparing unit is operable to perform at least one of an update and an addition to the plurality of reference models stored in said reference model storing unit, based on at least one of usage information regarding an object of

recognition, and specification information regarding specifications of the standard model which is to be created, in order to ensure that the system's models stay consistent with any changes to the user, as described by Junqua (col. 7, lines 42-50).

As per Claim 51, the limitations are similar to those in Claim 37, and so is rejected under similar rationale.

6. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang, in view of Nguyen and Junqua, as applied to Claim 37, above, and further in view of Kanevsky et al. (US 6,442,519), hereafter Kanevsky.

As per Claim 39, Chang, in view of Nguyen and Junqua, fail to teach, but Kanevsky teaches a similarity information creating unit operable to create, based on the plurality of reference models stored in said reference model storing unit and at least one of specification information regarding specifications of the standard model which is to be created, and usage information regarding an attribute which is an object of speech recognition, similarity information showing a degree of similarity to the plurality of reference models and at least one of the usage information and the specification information, wherein said reference model preparing unit is operable to determine whether or not to perform at least one of an update and an addition to the plurality of reference models stored in said reference model storing unit, based on the similarity information created by said similarity creating unit (“individual user is clustered with

other similar users", col. 3, line 62 – col. 4, line 9; "clustered into classes of similar users according to acoustic similarities… cluster update data", col. 7, lines 18-40; "identified similar language models are updated", Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Chang, in view of Nguyen and Junqua, to include the teaching of Kanevsky of a similarity information creating unit operable to create, based on the plurality of reference models stored in said reference model storing unit and at least one of specification information regarding specifications of the standard model which is to be created, and usage information regarding an attribute which is an object of speech recognition, similarity information showing a degree of similarity to the plurality of reference models and at least one of the usage information and the specification information, wherein said reference model preparing unit is operable to determine whether or not to perform at least one of an update and an addition to the plurality of reference models stored in said reference model storing unit, based on the similarity information created by said similarity creating unit, in order to improve speech recognition by computers, as described by Kanevsky (col. 3, lines 9-10).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC YEN whose telephone number is (571)272-4249. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EY 11/16/08

/Patrick N. Edouard/
Supervisory Patent Examiner, Art Unit 2626